List of Publications

Ricardo Vinuesa
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Total number of citations: 11466, h-index: 52 (from Google Scholar, April 28, 2025).

1. Peer-reviewed original articles

[1] B. Font, F. Alcántara-Ávila, J. Rabault, **R. Vinuesa** and O. Lehmkuhl. Deep reinforcement learning for active flow control in a turbulent separation bubble. *Nat. Commun.*, **16**, 1422, 2025.

[2] M. Reichstein, V. Benson, J. Blunk, G. Camps-Valls, F. Creutzig, C. J. Fearnley, B. Han, K. Kornhuber, N. Rahaman, B. Schölkopf, J. M. Tárraga, **R. Vinuesa**, K. Dall, J. Denzler, D. Frank, G. Martini, N. Nganga, D. C. Maddix and K. Weldemariam. Early warning of complex climate risk with integrated artificial intelligence. *Nat. Commun.*, **16**, 2564, 2025.

[3] P. Suárez, F. Alcántara-Ávila, A. Miró, J. Rabault, B. Font, O. Lehmkuhl and **R. Vinuesa**. Active flow control for drag reduction through multi-agent reinforcement learning on a turbulent cylinder at $Re_D = 3900$. *Flow Turbul. Combust.*, 2025.

[4] A. Cremades, S. Hoyas and **R. Vinuesa**. Additive-feature-attribution methods: A review on explainable artificial intelligence for fluid dynamics and heat transfer. *Int. J. Heat Fluid Flow*, **112**, 109662, 2025.

[5] G. Zampino, M. Atzori, E. Zea, E. Otero and **R. Vinuesa**. Aspect-ratio effect on the wake of a wall-mounted square cylinder immersed in a turbulent boundary layer. *Int. J. Heat Fluid Flow*, **112**, 109672, 2025.

[6] L. Guastoni, A. G. Balasubramanian, F. Foroozan, A. Güemes, A. Ianiro, S. Discetti, P. Schlatter, H. Azizpour and **R. Vinuesa**. Fully convolutional networks for velocity-field predictions based on the wall heat flux in turbulent boundary layers. *Theor. Comput. Fluid Dyn.*, **39**, 13, 2025.

[7] R. Deshpande, **R. Vinuesa**, J. Klewicki and I. Marusic. Active and inactive contributions to the wall pressure and wall-shear stress in turbulent boundary layers. *J. Fluid Mech.*, **1003**, A24, 2025.

[8] A. G. Balasubramanian, **R. Vinuesa** and O. Tammisola. Prediction of flow and polymeric stresses in a viscoelastic turbulent channel flow using convolutional neural networks. *J. Fluid Mech.*, **1009**, A36, 2025.

[9] P. Varelas, F. Larosa, S. Hoyas, J. A. Conejero, F. Contino, F. Fuso Nerini, J. García-Martínez, O. Garibo-i-Orts, A. Parente and **R. Vinuesa**. Artificial intelligence reveals unbalanced sustainability domains in funded research. *Results Eng.*, **25**, 104367, 2025.

[10] F. Mallor, C. Sanmiguel Vila, M. Hajipour, **R. Vinuesa**, P. Schlatter and R. Örlü. Experimental characterization of turbulent boundary layers around a NACA 4412 wing profile. *Exp. Therm. Fluid Sci.*, **160**, 111327, 2025.

[11] H. Aksoy, M. García Domene, P. Loganathan, S. Blakey, E. Zea, **R. Vinuesa** and E. Otero. Case study on SAF emissions from air travel considering emissions modeling impact. *Transp. Res. Interdiscip. Perspect.*, **19**, 101341, 2025.

[12] L. Rhomrasi, Y. Ahsini, A. Igualde-Sáez, **R. Vinuesa**, S. Hoyas, J. P. García-Sabater, M. J. Fullana-i-Alfonso and J. A. Conejero. LLM performance on mathematical reasoning in Catalan language. *Results Eng.*, **25**, 104366, 2025.

[13] A. Cremades, S. Hoyas, R. Deshpande, P. Quintero, M. Lellep, J. Lee, J. P. Monty, N. Hutchins, M. Linkmann, I. Marusic and **R. Vinuesa**. Identifying regions of importance in wall-bounded turbulence through explainable deep learning. *Nat. Commun.*, **15**, 3864, 2024.

[14] A. Solera-Rico, C. Sanmiguel Vila, M. Á. Gómez, Y. Wang, A. Almashjary, S. T. M. Dawson and **R. Vinuesa**. β-Variational autoencoders and transformers for reduced-order modelling of fluid flows. *Nat. Commun.*, **15**, 1361, 2024.

[15] F. Fuso Nerini, M. Mazzucato, J. Rockström, H. van Asselt, J. W. Hall, S. Matos, Å. Persson, B. Sovacool, **R. Vinuesa** and J. Sachs. Extending the Sustainable Development Goals to 2050 – a road map. *Nature*, **630**, 555–558, 2024.

[16] R. Deshpande and **R. Vinuesa**. Streamwise energy-transfer mechanisms in zero and adverse-pressure-gradient turbulent boundary layers. *J. Fluid Mech.*, **997**, A16, 2024.

[17] **R. Vinuesa**. Perspectives on predicting and controlling turbulent flows through deep learning. *Phys. Fluids*, **36**, 031401, 2024.

[18] J. Vasanth, J. Rabault, F. Alcántara-Ávila, M. Mortensen and **R. Vinuesa**. Multi-agent reinforcement learning for the control of three-dimensional Rayleigh–Bénard Convection. *Flow Turbul. Combust.*, 2024.

[19] H. Eivazi, Y. Wang and **R. Vinuesa**. Physics-informed deep-learning applications to experimental fluid mechanics. *Meas. Sci. Technol.*, **35**, 075303, 2024.

[20] S. Toosi, A. Peplinski, P. Schlatter and **R. Vinuesa**. The impact of finite span and wing-tip vortices on a turbulent NACA0012 wing. *J. Fluid Mech.*, **997**, A68, 2024.

[21] A. Cuéllar, A. Güemes, A. Ianiro, Ó. Flores, **R. Vinuesa** and S. Discetti. Three-dimensional generative adversarial networks for turbulent flow estimation from wall measurements. *J. Fluid Mech.*, **991**, A1, 2024.

[22] V. Baxerres, **R. Vinuesa** and H. Nagib. Evidence of quasiequilibrium in pressure-gradient turbulent boundary layers. *J. Fluid Mech.*, **987**, R8, 2024.

[23] A. G. Balasubramanian, V. Sanjay, M. Jalaal, **R. Vinuesa** and O. Tammisola. Bursting bubble in an elastoviscoplastic medium. *J. Fluid Mech.*, **1001**, A9, 2024.

[24] Y. Wang, A. Solera-Rico, C. Sanmiguel Vila, and **R. Vinuesa**. Towards optimal β-variational autoencoders combined with transformers for reduced-order modelling of turbulent flows. *Int. J. Heat Fluid Flow*, **105**, 109254, 2024.

[25] G. M. Cavallazzi, L. Guastoni, **R. Vinuesa** and A. Pinelli1. Deep reinforcement learning for the management of the wall regeneration cycle in wall-bounded turbulent flows. *Flow Turbul. Combust.*, 2024.

[26] S. Hoyas, **R. Vinuesa**, P. Schmid and H. Nagib. Sensitivity study of resolution and convergence requirements for the extended overlap region in wall-bounded turbulence. *Phys. Rev. Fluids*, **9**, L082601, 2024.

[27] F. Mallor, **R. Vinuesa**, R. Örlü and P. Schlatter. High-fidelity simulations of the flow around a NACA 4412 wing section at high angles of attack. *Int. J. Heat Fluid Flow*, **110**, 109590, 2024.

[28] O. A. Marino, A. Juanicotena, J. Errasti, D. Mayoral, F. Manrique de Lara, **R. Vinuesa** and E. Ferrer. A comparison of neural-network architectures to accelerate high-order h/p solvers. *Phys. Fluids*, **36**, 107132, 2024.

[29] A. Singh, A. Kanaujia, V. Kumar Singh and **R. Vinuesa**. Artificial intelligence for Sustainable Development Goals: bibliometric patterns and concept evolution trajectories. *Sustain. Dev.*, **32**, 724–754, 2024.

[30] A. Jardines, H. Eivazi, E. Zea, J. García-Heras, J. Simarro, E. Otero, M. Soler and **R. Vinuesa**. Thunderstorm prediction during pre-tactical air-traffic-flow management using convolutional neural networks. *Expert Syst. Appl.*, **241**, 122466, 2024.

[31] J .A. Martin, M. E. Rosti, S. Le Clainche, R. Navarro and **R. Vinuesa**. Direct numerical simulations of a novel device to fight virus airborne transmission. *Phys. Fluids*, **36**, 023352, 2024.

[32] J. Jeon, J. Lee, **R. Vinuesa**, S. J. Kim. Residual-based physics-informed transfer learning: A hybrid method for accelerating long-term CFD simulations via deep learning. *Int. J. Heat Mass Transf.*, **220**, 124900, 2024.

[33] R. Pozuelo, A. Cavalieri, P. Schlatter and **R. Vinuesa**. Widest scales in turbulent channels. *Phys. Fluids*, **36**, 025150, 2024.

[34] H. Nagib, **R. Vinuesa** and S. Hoyas. Utilizing indicator functions with computational data to confirm nature of overlap in normal turbulent stresses: Logarithmic or quarter-power. *Phys. Fluids*, **36**, 075145, 2024.

[35] D. Domingo-Calabuig, S. Hoyas, **R. Vinuesa** and J. A. Conejero. Visualizing academic contributions to achieving the Sustainable Development Goals through AI: The case of Universitat Politecnica de Valencia. *ACS Sustainable Res. Man.*, **1**, 810–812, 2024.

[36] S. Gandía-Barberá, A. Cremades, **R. Vinuesa**, S. Hoyas and M. J. Pérez-Quiles. Sequential and parallel algorithms to compute turbulent coherent structures. *Mathematics*, **12**, 3325, 2024.

[37] S. Hoyas, M. Oberlack, **R. Vinuesa**, P. Fernández de Córdoba, J. M. Isidro, M. J. Pérez-Quiles. Unfolding wall turbulence. *Results Eng.*, **24**, 103181, 2024.

[38] **R. Vinuesa**, S. L. Brunton and B. J. McKeon. The transformative potential of machine learning for experiments in fluid mechanics. *Nat. Rev. Phys.*, **5**, 536–545, 2023.

[39] L. Guastoni, J. Rabault, P. Schlatter, H. Azizpour and **R. Vinuesa**. Deep reinforcement learning for turbulent drag reduction in channel flows. *Eur. Phys. J. E*, **46**, 27, 2023.

[40] F. Larosa, S. Hoyas, J. García-Martínez, J. A. Conejero, F. Fuso Nerini and **R. Vinuesa**. Halting generative AI advancements may slow down progress in climate research. *Nat. Clim. Change*, **13**, 497–499, 2023.

[41] Á. Martínez-Sánchez, E. López, S. Le Clainche, A. Lozano-Durán, A. Srivastava and **R. Vinuesa**. Causality analysis of large-scale structures in the flow around a wall-mounted square cylinder. *J. Fluid Mech.*, **967**, A1, 2023.

[42] M. Atzori, P. Torres, A. Vidal, S. Le Clainche, S. Hoyas and **R. Vinuesa**. High-resolution simulations of a turbulent boundary layer impacting two obstacles in tandem. *Phys. Rev. Fluids*, **8**, 063801, 2023.

[43] G. Camps-Valls, A. Gerhardus, U. Ninad, G. Varando, G. Martius, E. Balaguer-Ballester, **R. Vinuesa**, E. Diaza, L. Zannai and J. Rungeb. Discovering causal relations and equations from data. *Phys. Rep.*, **1044**, 1–68, 2023.

[44] T. Wei, Z. Li, T. Knopp and **R. Vinuesa**. The mean wall-normal velocity in turbulent boundary layer flows under pressure gradient. *J. Fluid Mech.*, **975**, A27, 2023.

[45] A. G. Balasubramanian, L. Guastoni, P. Schlatter and **R. Vinuesa**. Direct numerical simulation of a zero-pressure-gradient turbulent boundary layer with passive scalars up to $Pr = 6$. *J. Fluid Mech.*, **974**, A49, 2023.

[46] R. Deshpande, A. van den Bogaard, **R. Vinuesa**, L. Lindić and I. Marusic. Reynolds-number effects on the outer region of adverse-pressure-gradient turbulent boundary layersd. *Phys. Rev. Fluids*, **8**, 124604, 2023.

[47] C. Vignon, J. Rabault, J. Vasanth, F. Alcántara-Ávila, M. Mortensen and **R. Vinuesa**. Effective control of two-dimensional Rayleigh–Bénard convection: Invariant multi-agent reinforcement learning is all you need. *Phys. Fluids*, **35**, 065146, 2023.

[48] S. Le Clainche, E. Ferrer, S. Gibson, E. Cross, A. Parente and **R. Vinuesa**. Improving aircraft performance using machine learning: A review. *Aerosp. Sci. Technol.*, **138**, 108354, 2023.

[49] C. Vignon, J. Rabault and **R. Vinuesa**. Recent advances in applying deep reinforcement learning for flow control: perspectives and future directions. *Phys. Fluids*, **35**, 031301, 2023.

[50] M. Z. Yousif, M. Zhang, L. Yu, **R. Vinuesa** and H.-C. Lim. A transformer-based synthetic-inflow generator for spatially-developing turbulent boundary layers. *J. Fluid Mech.*, **957**, A6, 2023.

[51] M. Z. Yousif, L. Yu, S. Hoyas, **R. Vinuesa** and H.-C. Lim. A deep-learning approach for reconstructing 3D turbulent flows from 2D observation data. *Sci. Rep.*, **13**, 2529, 2023.

[52] R. Hu, S. Dong and **R. Vinuesa**. General attached eddies: scaling laws and cascade self-similarity. *Phys. Rev. Fluids*, **8**, 044603, 2023.

[53] Á. Martínez-Sánchez, E. Lazpita, A. Corrochano, S. Le Clainche, S. Hoyas and **R. Vinuesa**. Data-driven assessment of arch vortices in simplified urban flows. *Int. J. Heat Fluid Flow*, **100**, 109101, 2023.

[54] A. G. Balasubramanian, L. Guastoni, P. Schlatter, H. Azizpour and **R. Vinuesa**. Predicting the wall-shear stress and wall pressure through convolutional neural networks. *Int. J. Heat Fluid Flow*, **103**, 109200, 2023.

[55] M. Z. Yousif, P. Kolesova, Y. Yang, M. Zhang, L. Yu, J. Rabault, **R. Vinuesa** and H.-C. Lim. Optimizing flow control with deep reinforcement learning: Plasma actuator placement around a square cylinder. *Phys. Fluids*, **35**, 125101, 2023.

[56] E. Rosenberg, C. Tarazona, F. Mallor, H. Eivazi, D. Pastor-Escuredo, F. Fuso-Nerini and **R. Vinuesa**. Sentiment analysis on Twitter data towards climate action. *Results Eng.*, **19**, 101287, 2023.

[57] K. Baum, J. Bryson, F. Dignum, V. Dignum, M. Grobelnik, H. Hoos, M. Irgens, P. Lukowicz, C. Muller, F. Rossi, J. Shawe-Taylor, A. Theodorou and **R. Vinuesa**. From fear to action: AI governance and opportunities for all. *Front. Comput. Sci.*, **5**, 1210421, 2023.

[58] D. Adshead, H. Akay, C. Duwig, E. Eriksson, M. Höjer, K. Larsdotter, Å. Svenfelt, **R. Vinuesa** and F. Fuso Nerini. A mission-driven approach for converting research into climate action. *npj Climate Action*, **2**, 13, 2023.

[59] G. Hasanuzzaman, H. Eivazi, S. Merbold, C. Egbers and **R. Vinuesa**. Enhancement of PIV measurements via physics-informed neural networks. *Meas. Sci. Technol.*, **34**, 044002, 2023.

[60] R. Pozuelo, Q. Li, P. Schlatter and **R. Vinuesa**. New insight into the spectra of near-equilibrium adverse-pressure-gradient turbulent boundary layers. *Phys. Rev. Fluids*, **8**, L022602, 2023.

[61] C. Amor, P. Schlatter, **R. Vinuesa** and S. Le Clainche. Higher-order dynamic mode decomposition on-the-fly: A low-order algorithm for complex fluid flows. *J. Comput. Phys.*, **475**, 111849, 2023.

[62] A. Andreolli, D. Gatti, **R. Vinuesa**, R. Örlü and P. Schlatter. Separating large-scale superposition and modulation in turbulent channels. *J. Fluid Mech.*, **958**, A37, 2023.

[63] M. Atzori, F. Mallor, R. Pozuelo, K. Fukagata, **R. Vinuesa** and P. Schlatter. A new perspective on skin-friction contributions in adverse-pressure-gradient turbulent boundary layers. *Int. J. Heat Fluid Flow*, **101**, 109117, 2023.

[64] C. Hedenqvist, M. Romero and **R. Vinuesa**. Improved learning of Mechanics through augmented reality. *Technol. Knowl. Learn.*, **28**, 347–368, 2023.

[65] A. Sánchez-Roncero, Ó. Garibo-i-Orts, J. A. Conejero, H. Eivazi, F. Mallor, E. Rosenberg, F. Fuso-Nerini, J. García-Martínez, **R. Vinuesa** and Sergio Hoyas. The Sustainable Development Goals and Aerospace Engineering: A critical note through artificial intelligence. *Results Eng.*, **17**, 100940, 2023.

[66] G. R. McPherson, B. Kallfelz Sirmacek, J. R. Massa, W. Kallfelz and **R. Vinuesa**. The commonly overlooked environmental tipping points. *Results Eng.*, **18**, 101118, 2023.

[67] **R. Vinuesa** and S. L. Brunton. Enhancing computational fluid dynamics with machine learning.[1] *Nat. Comput. Sci.*, **2**, 358–366, 2022.

[68] **R. Vinuesa** and S. L. Brunton. Emerging trends in machine learning for computational fluid dynamics. *Comput. Sci. Eng.*, **24**, 33–41, 2022.

[69] H. Eivazi, S. Le Clainche, S. Hoyas and **R. Vinuesa**. Towards extraction of orthogonal and parsimonious non-linear modes from turbulent flows. *Expert Syst. Appl.*, **202**, 117038, 2022.

[70] P. Varela, P. Suárez, F. Alcántara-Ávila, A. Miró, J. Rabault, B. Font, L. M. García-Cuevas, O. Lehmkuhl and **R. Vinuesa**. Deep reinforcement learning for flow control exploits different physics for increasing Reynolds number regimes. *Actuators*, **11**, 359, 2022.

[71] M. Morimoto, K. Fukami, R. Maulik, **R. Vinuesa** and K. Fukagata. Assessments of model-form uncertainty using Gaussian stochastic weight averaging for fluid-flow regression. *Phys. D: Nonlinear Phenom.*, **440**, 133454, 2022.

[72] R. Pozuelo, Q. Li, P. Schlatter and **R. Vinuesa**. An adverse-pressure-gradient turbulent boundary layer with nearly-constant $\beta \simeq 1.4$ up to $Re_\theta \simeq 8,700$. *J. Fluid Mech.*, **939**, A34, 2022.

[73] E. Lazpita, Á. Martínez-Sánchez, A. Corrochano, S. Hoyas, S. Le Clainche and **R. Vinuesa**. On the generation and destruction mechanisms of arch vortices in urban fluid flows. *Phys. Fluids*, **34**, 051702, 2022.

[74] L. Yu, M. Z. Yousif, M. Zhang, S. Hoyas, **R. Vinuesa** and H.-C. Lim. Three-dimensional enhanced super-resolution generative adversarial network for super-resolution reconstruction of turbulent flows with tricubic interpolation-based transfer learning. *Phys. Fluids*, **34**, 125126, 2022.

[75] H. Eivazi, M. Tahani, P. Schlatter and **R. Vinuesa**. Physics-informed neural networks for solving Reynolds-averaged Navier–Stokes equations. *Phys. Fluids*, **34**, 075117, 2022.

[76] G. Borrelli, L. Guastoni, H. Eivazi, P. Schlatter and **R. Vinuesa**. Predicting the temporal dynamics of turbulent channels through deep learning. *Int. J. Heat Fluid Flow*, **96**, 109010, 2022.

[77] Y. Morita, S. Rezaeiravesh, N. Tabatabaei, **R. Vinuesa**, K. Fukagata and P. Schlatter. Applying Bayesian optimization with Gaussian process regression to computational fluid dynamics problems. *J. Comput. Phys.*, **449**, 110788, 2022.

[78] Y. Fan, M. Atzori, **R. Vinuesa**, D. Gatti, P. Schlatter and W. Li. Decomposition of the mean friction drag on a NACA4412 airfoil under uniform blowing/suction. *J. Fluid Mech.*, **932**, A31, 2022.

[1]This paper was featured on the issue cover of Nature Computational Science.

[79] M. Atzori, **R. Vinuesa** and P. Schlatter. Control effects on coherent structures in a non-uniform adverse-pressure-gradient boundary layer. *Int. J. Heat Fluid Flow*, **97**, 109036, 2022.

[80] D. Schmekel, F. Alcántara-Ávila, S. Hoyas and **R. Vinuesa**. Predicting coherent turbulent structures via deep learning. *Front. Phys.*, **10**, 888832, 2022.

[81] J. D. Patón-Romero, **R. Vinuesa**, L. Jaccheri and M. T. Baldassarre. State of gender equality in and by artificial intelligence. *IADIS Int. J. Comp. Sci. Inf. Syst.*, **17**, 31–48, 2022.

[82] B. Sirmacek and **R. Vinuesa**. Remote sensing and AI for building climate adaptation applications. *Results Eng.*, **15**, 100524, 2022.

[83] O. Nasir, R. T. Javed, S. Gupta, **R. Vinuesa** and J. Qadir. Artificial intelligence and Sustainable Development Goals nexus via four vantage points. *Technol. Soc.*, **72**, 102171, 2022.

[84] D. Pastor-Escuredo, P. Treleaven and **R. Vinuesa**. An ethical framework for artificial intelligence and sustainable cities. *AI*, **3**, 961–974, 2022.

[85] S. Rezaeiravesh, **R. Vinuesa** and P. Schlatter. An uncertainty-quantification framework for assessing accuracy, sensitivity and robustness in computational fluid dynamics. *J. Comput. Sci.*, **62**, 101688, 2022.

[86] M. Morimoto, K. Fukami, R. Maulik, **R. Vinuesa** and K. Fukagata. Model-form uncertainty quantification in neural-network-based fluid-flow estimation. *Nagare J. Jpn. Soc. Fluid Mech.*, **41**, 2022.

[87] R. T. Javed, O. Nasir, M. Borit, L. Vanhée, E. Zea, S. Gupta, **R. Vinuesa** and J. Qadir. Get out of the BAG! Silos in AI ethics education: Unsupervised topic modeling analysis of global AI curricula. *J. Artif. Intell. Res.*, **73**, 933–965, 2022.

[88] V. Mai, B. Vanderborght, T. Haidegger, A. Khamis, N. Bhargava, D. B. O. Boesl, K. Gabriels, A. Jacobs, A. Moon, R. Murphy, Y. Nakauchi, E. Prestes, B. Rao R., **R. Vinuesa** and C.-M. Mörch. The role of robotics in achieving the United Nations Sustainable Development Goals – The Experts' Meeting at the 2021 IEEE/RSJ IROS Workshop. *IEEE Robot. Autom. Mag.*, **29**, 92–107, 2022.

[89] **R. Vinuesa**, O. Lehmkuhl, A. Lozano-Durán and J. Rabault. Flow control in wings and discovery of novel approaches via deep reinforcement learning. *Fluids*, **7**, 62, 2022.

[90] **R. Vinuesa** and S. Le Clainche. Machine-learning methods for complex flows. *Energies*, **15**, 1513, 2022.

[91] N. Tabatabaei, **R. Vinuesa**, R. Örlü and P. Schlatter. Techniques for turbulence tripping of boundary layers in RANS simulations. *Flow Turbul. Combust.*, **108**, 661–682, 2022.

[92] N. Tabatabaei, M. Hajipour, F. Mallor, R. Örlü, **R. Vinuesa** and P. Schlatter. RANS modelling of a NACA4412 wake using wind tunnel measurements. *Fluids*, **7**, 153, 2022.

[93] G. R. McPherson, B. Sirmacek and **R. Vinuesa**. Environmental thresholds for mass-extinction events. *Results Eng.*, **13**, 100342, 2022.

[94] D. Mamchur, J. Peksa, S. Le Clainche and **R. Vinuesa**. Application and advances in radiographic and novel technologies used for non-intrusive object inspection. *Sensors*, **22**, 2121, 2022.

[95] R. Raman, P. Singh, V. K. Singh, **R. Vinuesa** and P. Nedungadi. Understanding the bibliometric patterns of publications in IEEE Access. *IEEE Access*, **10**, 35561–35577, 2022.

[96] M. Atzori, W. Köpp, S. W. D. Chien, D. Massaro, F. Mallor, A. Peplinski, M. Rezaei, N. Jansson, S. Markidis, **R. Vinuesa**, E. Laure, P. Schlatter and T. Weinkauf. In-situ visualization of large-scale turbulence simulations in Nek5000 with ParaView Catalyst. *J. Supercomput.*, **78**, 3605–3620, 2022.

[97] D. Mamchur, J. Peksa, S. Le Clainche and **R. Vinuesa**. Analysis of the state of the art on non-intrusive object-screening techniques. *Prz. Elektrotech.*, **98**, 168–173, 2022.

[98] S. Singh Gill, **R. Vinuesa**, V. Balasubramanian and S. K. Ghosh. Innovative software systems for managing the impact of the COVID-19 pandemic. *Softw.: Pract. Exper.*, **52**, 821–823, 2022.

[99] **R. Vinuesa** and B. Sirmacek. Interpretable deep-learning models to help achieve the Sustainable Development Goals. *Nat. Mach. Intell.*, **3**, 926, 2021.

[100] L. Guastoni, A. Güemes, A. Ianiro, S. Discetti, P. Schlatter, H. Azizpour and **R. Vinuesa**. Convolutional-network models to predict wall-bounded turbulence from wall quantities. *J. Fluid Mech.*, **928**, A27, 2021.

[101] A. Güemes, S. Discetti, A. Ianiro, B. Sirmacek, H. Azizpour and **R. Vinuesa**. From coarse wall measurements to turbulent velocity fields through deep learning. *Phys. Fluids*, **33**, 075121, 2021.

[102] H. Eivazi, L. Guastoni, P. Schlatter, H. Azizpour and **R. Vinuesa**. Recurrent neural networks and Koopman-based frameworks for temporal predictions in a low-order model of turbulence. *Int. J. Heat Fluid Flow*, **90**, 108816, 2021.

[103] C. Jiang, **R. Vinuesa**, R. Chen, J. Mi, S. Laima and H. Li. An interpretable framework of data-driven turbulence modeling using deep neural networks. *Phys. Fluids*, **33**, 055133, 2021.

[104] W. Naudé and **R. Vinuesa**. Data deprivations, data gaps and digital divides: lessons from the COVID-19 pandemic. *Big Data Soc.*, **8**, 1–12, 2021.

[105] L. I. Abreu, A. Tanarro, A. V. G. Cavalieri, P. Schlatter, **R. Vinuesa**, A. Hanifi and D. S. Henningson. Spanwise coherent hydrodynamic waves around at plates and airfoils. *J. Fluid Mech.*, **927**, A1, 2021.

[106] **R. Vinuesa**. High-fidelity simulations in complex geometries: towards better flow understanding and development of turbulence models. *Results Eng.*, **11**, 100254, 2021.

[107] M. Atzori, **R. Vinuesa**, A. Stroh, D. Gatti, B. Frohnapfel and P. Schlatter. Uniform blowing and suction applied to non-uniform adverse-pressure-gradient wing boundary layers. *Phys. Rev. Fluids*, **6**, 113904, 2021.

[108] M. Atzori, **R. Vinuesa**, A. Lozano-Durán and P. Schlatter. Intense Reynolds-stress events in turbulent ducts. *Int. J. Heat Fluid Flow*, **89**, 108802, 2021.

[109] H.-H. Goh and **R. Vinuesa**. Regulating artificial-intelligence applications to achieve the sustainable development goals. *Discov. Sustain.*, **2**, 52, 2021.

[110] S. Rezaeiravesh, **R. Vinuesa** and P. Schlatter. On numerical uncertainties in scale-resolving simulations of canonical wall turbulence. *Comput. Fluids*, **227**, 105024, 2021.

[111] G. Fahland, A. Stroh, B. Frohnapfel, M. Atzori, **R. Vinuesa**, P. Schlatter and D. Gatti. Investigation of blowing and suction for turbulent flow control on airfoils. *AIAA J.*, **59**, 4422–4436, 2021.

[112] M. Stuck, A. Vidal, P. Torres, H. M. Nagib, C. Wark and **R. Vinuesa**. Spectral-element simulation of the turbulent flow in an urban environment. *Appl. Sci.*, **11**, 6472, 2021.

[113] S. Gupta, S. D. Langhans, S. Domisch, F. Fuso Nerini, A. Felländer, M. Battaglini, M. Tegmark and **R. Vinuesa**. Assessing whether artificial intelligence is an enabler or an inhibitor of sustainability at indicator level. *Transp. Eng.*, **4**, 100064, 2021.

[114] P. Torres, S. Le Clainche and **R. Vinuesa**. On the experimental, numerical and data-driven methods to study urban flows. *Energies*, **14**, 1310, 2021.

[115] R. Raman, K. Achuthan, **R. Vinuesa** and P. Nedungadi. COVIDTAS COVID-19 tracing app scale – An evaluation framework. *Sustainability*, **13**, 2912, 2021.

[116] M. Shahroz, F. Ahmad, M. S. Younis, N. Ahmad, M. N. K. Boulos, **R. Vinuesa** and J. Qadir. COVID-19 digital contact tracing applications and techniques: a review post initial deployments. *Transp. Eng.*, **5**, 100072, 2021.

[117] J. Amo-Navarro, **R. Vinuesa**, J. A. Conejero and S. Hoyas. Two-dimensional compact-finite-difference schemes for solving the bi-Laplacian operator with homogeneous wall-normal derivatives. *Mathematics*, **9**, 2508, 2021.

[118] A. Corrochano, D. Xavier, P. Schlatter, **R. Vinuesa** and S. Le Clainche. Flow structures on a planar Food and Drug Administration (FDA) nozzle at low and intermediate Reynolds number. *Fluids*, **6**, 4, 2021.

[119] N. Tabatabaei, R. Örlü, **R. Vinuesa** and P. Schlatter. Aerodynamic free-flight conditions in wind-tunnel modelling through reduced-order wall inserts. *Fluids*, **6**, 265, 2021.

[120] S. Rezaeiravesh, **R. Vinuesa** and P. Schlatter. UQit: A Python package for uncertainty quantification (UQ) in computational fluid dynamics (CFD). *J. Open Source Softw.*, **6**, 2871, 2021.

[121] R. Raman, **R. Vinuesa** and P. Nedungadi. Bibliometric analysis of SARS, MERS, and COVID-19 studies from India and connection to Sustainable Development Goals. *Sustainability*, **13**, 7555, 2021.

[122] R. Raman, **R. Vinuesa**, and P. Nedungadi. Acquisition and user behavior in online science laboratories before and during COVID-19 pandemic. *Multimodal Technol. Interact.*, **5**, 46, 2021.

[123] Momtazmanesh *et al.* International scientific collaboration is needed to bridge science to society: USERN2020 consensus statement. *SN Compr. Clin. Med.*, **3**, 1699–1703, 2021.

[124] **R. Vinuesa**, H. Azizpour, I. Leite, M. Balaam, V. Dignum, S. Domisch, A. Felländer, S. D. Langhans, M. Tegmark and F. Fuso Nerini. The role of artificial intelligence in achieving the Sustainable Development Goals. *Nat. Commun.*, **11**, 233, 2020.

[125] R. Örlü and **R. Vinuesa**. Instantaneous wall-shear-stress measurements: advances and application to near-wall extreme events. *Meas. Sci. Technol.*, **31**, 112001, 2020.

[126] Y. Fan, W. Li, M. Atzori, R. Pozuelo, P. Schlatter and **R. Vinuesa**. Decomposition of the mean friction drag in adverse-pressure-gradient turbulent boundary layers. *Phys. Rev. Fluids*, **5**, 114608, 2020.

[127] A. Tanarro, **R. Vinuesa** and P. Schlatter. Effect of adverse pressure gradients on turbulent wing boundary layers. *J. Fluid Mech.*, **883**, A8, 2020.

[128] L. I. Abreu, A. V. G. Cavalieri, P. Schlatter, **R. Vinuesa** and D. S. Henningson. SPOD and resolvent analysis of near-wall coherent structures in turbulent pipe flows. *J. Fluid Mech.*, **900**, A11, 2020.

[129] C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro, P. Schlatter and R. Örlü. Separating adverse-pressure-gradient and Reynolds-number effects in turbulent boundary layers. *Phys. Rev. Fluids*, **5**, 064609, 2020.

[130] R. C. Chin, **R. Vinuesa**, R. Örlü, J. I. Cardesa, A. Noorani, M. S. Chong and P. Schlatter. Back-flow events under the effect of secondary flow of Prandtl's first kind. *Phys. Rev. Fluids*, **5**, 074606, 2020.

[131] **R. Vinuesa**, A. Theodorou, M. Battaglini and V. Dignum. A socio-technical framework for digital contact tracing. *Results Eng.*, **8**, 100163, 2020.

[132] A. Dróżdż, W. Elsner, P. Niegodajew, **R. Vinuesa**, R. Örlü and P. Schlatter. A description of turbulence intensity profiles for boundary layers with adverse pressure gradient. *Eur. J. Mech. B/Fluids*, **84**, 470–477, 2020.

[133] C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro, P. Schlatter and R. Örlü. Experimental realisation of near-equilibrium adverse-pressure-gradient turbulent boundary layers. *Exp. Thermal Fluid Sci.*, **112**, 109975, 2020.

[134] C. Amor, J. M. Pérez, P. Schlatter, **R. Vinuesa** and S. Le Clainche. Modeling the turbulent wake behind a wall-mounted square cylinder. *Log. J. IGPL*, jzaa060, 2020.

[135] N. Sánchez Abad, **R. Vinuesa**, P. Schlatter, M. Andersson and M. Karlsson. Simulation strategies for the Food and Drug Administration nozzle using Nek5000. *AIP Adv.*, **10**, 025033, 2020.

[136] M. Atzori, **R. Vinuesa**, G. Fahland, A. Stroh, D. Gatti, B. Frohnapfel and P. Schlatter. Aerodynamic effects of uniform blowing and suction on a NACA4412 airfoil. *Flow Turbul. Combust.*, **105**, 735–759, 2020.

[137] A. Tanarro, F. Mallor, N. Offermans, A. Peplinski, **R. Vinuesa** and P. Schlatter. Enabling adaptive mesh refinement for spectral-element simulations of turbulence around wing sections. *Flow Turbul. Combust.*, **105**, 415–436, 2020.

[138] L. I. Abreu, A. V. G. Cavalieri, P. Schlatter, **R. Vinuesa** and D. S. Henningson. Resolvent modelling of near-wall coherent structures in turbulent channel flow. *Int. J. Heat Fluid Flow*, **85**, 108662, 2020.

[139] A. Karnama and **R. Vinuesa**. Organic growth theory for corporate sustainability. *Sustainability*, **12**, 8523, 2020.

[140] P. A. Srinivasan, L. Guastoni, H. Azizpour, P. Schlatter and **R. Vinuesa**. Predictions of turbulent shear flows using deep neural networks. *Phys. Rev. Fluids*, **4**, 054603, 2019.

[141] K. Sasaki, **R. Vinuesa**, A. V. G. Cavalieri, P. Schlatter and D. S. Henningson. Transfer functions for flow predictions in wall-bounded turbulence. *J. Fluid Mech.*, **864**, 708–745, 2019.

[142] E. Dogan, R. Örlü, D. Gatti, **R. Vinuesa** and P. Schlatter. Quantification of amplitude modulation in wall-bounded turbulence. *Fluid Dyn. Res.*, **51**, 011408, 2019.

[143] H. M. Nagib, A. Vidal and **R. Vinuesa**. Vorticity fluxes: A tool for three-dimensional and secondary flows in turbulent shear flows. *J. Fluids Struct.*, **89**, 39–48, 2019.

[144] F. Schenk and **R. Vinuesa**. Enhanced large-scale atmospheric flow interaction with ice sheets at high model resolution. *Results Eng.*, **3**, 100030, 2019.

[145] A. Güemes, C. Sanmiguel Vila, R. Örlü, **R. Vinuesa**, P. Schlatter, A. Ianiro and S. Discetti. Flow organization in the wake of a rib in a turbulent boundary layer with pressure gradient. *Exp. Thermal Fluid Sci.*, **108**, 115–124, 2019.

[146] S. Straub, P. Forooghi, L. Marocco, T. Wetzel, **R. Vinuesa**, P. Schlatter and B. Frohnapfel. The influence of thermal boundary conditions on turbulent forced convection pipe flow at two Prandtl numbers. *Int. J. Heat Mass Transf.*, **144**, 118601, 2019.

[147] A. Karnama, E. B. Haghighi and **R. Vinuesa**. Organic data centers: a sustainable solution for computing facilities. *Results Eng.*, **4**, 100063, 2019.

[148] A. Vidal, H. M. Nagib, P. Schlatter and **R. Vinuesa**. Secondary flow in spanwise-periodic in-phase sinusoidal channels. *J. Fluid Mech.*, **851**, 288–316, 2018.

[149] **R. Vinuesa**, P. S. Negi, M. Atzori, A. Hanifi, D. S. Henningson and P. Schlatter. Turbulent boundary layers around wing sections up to $Re_c = 1,000,000$. *Int. J. Heat Fluid Flow*,z **72**, 86–99, 2018.

[150] B. Monnier, S. A. Goudarzi, **R. Vinuesa** and C. Wark. Turbulent structure of a simplified urban fluid flow studied through stereoscopic particle image velocimetry. *Boundary-Layer Meteorol.*, **166**, 239–268, 2018.

[151] **R. Vinuesa**, P. Schlatter and H. M. Nagib. Secondary flow in turbulent ducts with increasing aspect ratio. *Phys. Rev. Fluids*, **3**, 054606, 2018.

[152] S. Rezaeiravesh, **R. Vinuesa**, M. Liefvendahl and P. Schlatter. Assessment of uncertainties in hot-wire anemometry and oil-film interferometry measurements for wall-bounded turbulent flows. *Eur. J. Mech. B/Fluids*, **72**, 57–73, 2018.

[153] E. Otero, **R. Vinuesa**, O. Marin, E. Laure and P. Schlatter. Lossy data compression effects on wall-bounded turbulence: bounds on data reduction. *Flow Turbul. Combust.*, **101**, 365–387, 2018.

[154] P. S. Negi, **R. Vinuesa**, A. Hanifi, P. Schlatter and D. S. Henningson. Unsteady aerodynamic effects in small-amplitude pitch oscillations of an airfoil. *Int. J. Heat Fluid Flow*, **71**, 378–391, 2018.

[155] A. Vidal, **R. Vinuesa**, P. Schlatter and H. M. Nagib. Turbulent rectangular ducts with minimum secondary flow. *Int. J. Heat Fluid Flow*, **72**, 317–328, 2018.

[156] A. Vidal, H. M. Nagib and **R. Vinuesa**. Vorticity fluxes and secondary flow: Relevance for turbulence modelling. *Phys. Rev. Fluids*, **3**, 072602(R), 2018.

[157] **R. Vinuesa**, S. M. Hosseini, A. Hanifi, D. S. Henningson and P. Schlatter. Pressure-gradient turbulent boundary layers developing around a wing section. *Flow Turbul. Combust.*, **99**, 613–641, 2017.

[158] **R. Vinuesa**, R. Örlü, C. Sanmiguel Vila, A. Ianiro, S. Discetti and P. Schlatter. Revisiting history effects in adverse-pressure-gradient turbulent boundary layers. *Flow Turbul. Combust.*, **99**, 565–587, 2017.

[159] S. Straub, **R. Vinuesa**, P. Schlatter, B. Frohnapfel and D. Gatti. Turbulent duct flow controlled with spanwise wall oscillations. *Flow Turbul. Combust.*, **99**, 787–806, 2017.

[160] C. Sanmiguel Vila, R. Örlü, **R. Vinuesa**, P. Schlatter, A. Ianiro and S. Discetti. Adverse-pressure-gradient effects on turbulent boundary layers: statistics and flow-field organization. *Flow Turbul. Combust.*, **99**, 589–612, 2017.

[161] A. Vidal, **R. Vinuesa**, P. Schlatter and H. M. Nagib. Influence of corner geometry on the secondary flow in turbulent square ducts. *Int. J. Heat Fluid Flow*, **67**, 69–78, 2017.

[162] A. Bobke, **R. Vinuesa**, R. Örlü and P. Schlatter. History effects and near equilibrium in adverse-pressure-gradient turbulent boundary layers. *J. Fluid Mech.*, **820**, 667–692, 2017.

[163] C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro, P. Schlatter and R. Örlü. On the identification of well-behaved turbulent boundary layers. *J. Fluid Mech.*, **822**, 109–138, 2017.

[164] **R. Vinuesa**, R. Örlü and P. Schlatter. Characterisation of backflow events over a wing section. *J. Turbul.*, **18**, 170–185, 2017.

[165] C. Prus, **R. Vinuesa**, P. Schlatter, E. Tembrás, E. Mestres and J. P. Berro Ramírez. Impact simulation and optimisation of elastic fuel tanks reinforced with exoskeleton for aerospace applications. *Int. J. Crashworthiness*, **22**, 271–293, 2017.

[166] S. M. Hosseini, **R. Vinuesa**, P. Schlatter, A. Hanifi and D. S. Henningson. Direct numerical simulation of the flow around a wing section at moderate Reynolds number.[2] *Int. J. Heat Fluid Flow*, **61**, 117–128, 2016.

[167] O. Marin, **R. Vinuesa**, A. V. Obabko and P. Schlatter. Characterization of the secondary flow in hexagonal ducts. *Phys. Fluids*, **28**, 125101, 2016.

[168] **R. Vinuesa**, C. Prus, P. Schlatter and H. M. Nagib. Convergence of numerical simulations of turbulent wall-bounded flows and mean cross-flow structure of rectangular ducts. *Meccanica*, **51**, 3025–3042, 2016.

[169] A. Noorani, **R. Vinuesa**, L. Brandt and P. Schlatter. Aspect ratio effect on particle transport in turbulent duct flows. *Phys. Fluids*, **28**, 105103, 2016.

[170] **R. Vinuesa**, A. Bobke, R. Örlü and P. Schlatter. On determining characteristic length scales in pressure-gradient turbulent boundary layers. *Phys. Fluids*, **27**, 105107, 2016.

[171] **R. Vinuesa**, R. D. Duncan and H. M. Nagib. Alternative interpretation of the Superpipe data and motivation for CICLoPE: the effect of a decreasing viscous length scale. *Eur. J. Mech. B/Fluids*, **58**, 109–116, 2016.

[172] **R. Vinuesa**, L. F. de Arévalo, M. Luna and H. Cachafeiro. Simulations and experiments of heat loss from a parabolic trough absorber tube over a range of pressures and gas compositions in the vacuum chamber. *J. Renew. Sustain. Energy*, **8**, 023701, 2016.

[173] **R. Vinuesa** and H. M. Nagib. Enhancing the accuracy of measurement techniques in high Reynolds number turbulent boundary layers for more representative comparison to their canonical representations. *Eur. J. Mech. B/Fluids*, **55**, 300–312, 2016.

[174] A. Samanta, **R. Vinuesa**, I. Lashgari, P. Schlatter and L. Brandt. Enhanced secondary motion of the turbulent flow through a porous square duct. *J. Fluid Mech.*, **784**, 681–693, 2015.

[175] **R. Vinuesa**, M. H. Hites, C. E. Wark and H. M. Nagib. Documentation of the role of large-scale structures in the bursting process in turbulent boundary layers. *Phys. Fluids*, **27**, 105107, 2015.

[176] **R. Vinuesa**, P. Schlatter, J. Malm, C. Mavriplis and D. S. Henningson. Direct numerical simulation of the flow around a wall-mounted square cylinder under various inflow conditions. *J. Turbul.*, **16**, 555–587, 2015.

[177] **R. Vinuesa**, P. Schlatter and H. M. Nagib. On minimum aspect ratio for duct-flow facilities and the role of side walls in generating secondary flows. *J. Turbul.*, **16**, 588–606, 2015.

[178] **R. Vinuesa**, A Noorani, A. Lozano-Durán, G. K. El Khoury, P. Schlatter, P. F. Fischer and H. M. Nagib. Aspect ratio effects in turbulent duct flows studied through direct numerical simulation.[3] *J. Turbul.*, **15**, 677–706, 2014.

[179] **R. Vinuesa**, E. Bartrons, D. Chiu, K. M. Dressler, J.-D. Rüedi, Y. Suzuki and H. M. Nagib. New insight into flow development and two dimensionality of turbulent channel flows. *Exp. Fluids*, **55**, 1759, 2014.

[180] **R. Vinuesa**, P. Schlatter and H. M. Nagib. Role of data uncertainties in identifying the logarithmic region of turbulent boundary layers. *Exp. Fluids*, **55**, 1751, 2014.

[181] **R. Vinuesa**, P. H. Rozier, P. Schlatter and H. M. Nagib. Experiments and computations of localized pressure gradients with different history effects. *AIAA J.*, **52**, 368–384, 2014.

[2] See the APS Gallery of Fluid Motion entry: `https://www.youtube.com/watch?v=hz7UjN_vYuw`.

[3] This paper provided one of the cover images for the International Symposium on Turbulence & Shear Flow Phenomena (TSFP-10).

[182] S. C. C. Bailey, M. Hultmark, J. P. Monty, P. H. Alfredsson, M. S. Chong, R. D. Duncan, J. H. M. Fransson, N. Hutchins, I. Marusic, B. J. McKeon, H. M. Nagib, R. Örlü, A. Segalini, A. J. Smits and **R. Vinuesa**. Obtaining accurate mean velocity measurements in high Reynolds number turbulent boundary layers using Pitot tubes. *J. Fluid Mech.*, **715**, 642–670, 2013.

2. Peer-reviewed conference articles

[1] K. Wijk, **R. Vinuesa** and H. Azizpour. SFESS: Score function estimators for k-subset sampling. *Proc. 13th International Conference on Learning Representations (ICLR), August 24–28, Singapore*, 2025.

[2] S. B. C. Gutha, **R. Vinuesa** and H. Azizpour. Inverse problems with diffusion models: A MAP estimation perspective. *Proc. Winter Conference on Applications of Computer Vision (WACV), February 28 – March 4, Tucson, Arizona, USA*, 2025.

[3] N. Tonioni, L. Agostini, F. Kerhervé, L. Cordier and **R. Vinuesa**, VIVALDy: AI-Driven Low-Order Modeling of Vortex-Induced Vibrations via β-Variational Autoencoders, Transformers, and Adversarial Training, *Proc. 1st Int. Symp. AI Fluid Mech.*, 2025.

[4] R. Montalà, B. Font, P. Suárez, J. Rabault, O. Lehmkuhl, R. Vinuesa and I. Rodriguez. Deep Reinforcement Learning for Active Flow Control around a Three-Dimensional Flow-Separated Wing at $Re = 1,000$. *Proc. 1st Intl. Symp. on AI and Fluid Mechanics*, 2025.

[5] A. Vishwasrao, S. Gutha, A. Patil, K. Wijk, B. McKeon, C. Gorle, H. Azizpour and **R. Vinuesa**. Diffusion models for optimal sensor placement and sparse reconstruction for simplified urban flows. *Proc. CTR Summer Program*, **2024**.

[6] F. Larosa, S. Hoyas, F. Mallor, J. A. Conejero, J. García-Martínez, F. Fuso Nerini and **R. Vinuesa**. Critical misalignments between climate action and sustainable development goals revealed. *Workshop Tackling Climate Change with Machine Learning, NeurIPS*, 2024.

[7] B. Font, F. Alcántara-Ávila, J. Rabault, **R. Vinuesa** and O. Lehmkuhl. Active flow control of a turbulent separation bubble through deep reinforcement learning. *J. Phys.: Conf. Ser.*, **2753**, 012022, 2024.

[8] D. Wälchli, L. Guastoni, **R. Vinuesa** and P. Koumoutsakos. Drag reduction in a minimal channel flow with scientific multi-agent reinforcement learning. *J. Phys.: Conf. Ser.*, **2753**, 012024, 2024.

[9] B. Lopez-Doriga, M. Atzori, **R. Vinuesa**, H. J. Bae, A. Srivastava and S. T. M. Dawson. Linear and nonlinear Granger causality analysis of turbulent duct flows. *J. Phys.: Conf. Ser.*, **2753**, 012017, 2024.

[10] **R. Vinuesa**, J. Rabault, H. Azizpour and L. Guastoni. Influence of the state observation on deep-reinforcement-learning drag-reduction policies in wall-bounded flows. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[11] P. Suárez, F. Alcántara-Ávila, J. Rabault, A. Miró, B. Font, O. Lehmkuhl and **R. Vinuesa**. Active flow control of three-dimensional cylinders using deep reinforcement learning. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[12] S. Toosi, A. Peplinski, P. Schlatter and **R. Vinuesa**. The impact of finite span and wing-tip vortices on a turbulent NACA0012 wing. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[13] J. Zhang, Z. Zhu, **R. Vinuesa** and R. Hu. Causal analysis of inner and outer motions in near-wall turbulent flow. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[14] S. Hoyas, **R. Vinuesa** P. J. Schmid and H. M. Nagib. Higher DNS-resolution requirements for expanded overlap region and confirmation of a convergene criterion. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[15] R. Deshpande, **R. Vinuesa** and I. Marusic. Characteristics of active and inactive motions in high-Reynolds-number turbulent boundary layers. *Proc. 13th International Symposium on Turbulence and Shear Flow Phenomena (TSFP13), Montreal, Canada, June 25–28*, 2024.

[16] K. Wijk, **R. Vinuesa** and H. Azizpour. Revisiting score function estimators for k-subset sampling. *Proc. 41st International Conference on Machine Learning, Vienna, Austria*, 2024.

[17] A. Nilsson, K. Wijk, S. B. C. Gutha, E. Englesson, A. Hotti, C. Saccardi, O. Kviman, J. Lagergren, **R. Vinuesa** and H. Azizpour. Indirectly parameterized concrete autoencoders. *Proc. 41st International Conference on Machine Learning, Vienna, Austria*, 2024.

[18] P. R. Hegde, O. Kyriienko, H. Heimonen, P. Tolias, G. Netzer, P. Barkoutsos, **R. Vinuesa**, I. Peng, S. Markidis. Beyond the buzz: strategic paths for enabling useful NISQ applications. *Proc. 21st ACM International Conference on Computing Frontiers (CF 24), May 7–9, Ischia, Italy*, 2024.

[19] R. Montala, B. Font, P. Suarez, J. Rabault, O. Lehmkuhl, **R. Vinuesa** and I. Rodriguez. Towards active flow control strategies through deep reinforcement learning. *Proc. 9th European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS Congress, 3–7 June 2024, Lisboa, Portugal*, 2024.

[20] R. Montala, B. Font, P. Suarez, J. Rabault, O. Lehmkuhl, **R. Vinuesa** and I. Rodriguez. Deep reinforcement learning strategies for optimizing flow control in wings. *Proc. 35th International Conference on Parallel Computational Fluid Dynamics Sep 02–04 2024, Bonn, Germany*, 2024.

[21] J. Ekelund, **R. Vinuesa**, Y. Khotyaintsev, P. Henri, G. L. Delzanno and S. Markidis. AI in space for scientific missions: strategies for minimizing neural-network model upload. *Proc. IEEE 20th International Conference on e-Science*, 2024.

[22] H. Nagib, V. Baxerres, **R. Vinuesa** and S. Hoyas. Recent lessons from computations in wall-bounded turbulence for pipes and channels. *Progress in Turbulence X, Springer Proceedings in Physics 404*, 3–11, 2024.

[23] H. Harder, J. Rabault, **R. Vinuesa**, M. Mortensen and S. Peitz. Solving partial differential equations with equivariant extreme learning machines. *Proc. Symposium on Systems Theory in Data and Optimization (SysDO2024)*, 2024.

[24] L. J. Silva, W. Wolf and **R. Vinuesa**. Adverse pressure gradient effects on extreme events and intermittency in the turbulent boundary layer of a NACA0012 at 12 deg. angle of attack. *Proc. AIAA Aviation Forum and Ascent, 29 July – 2 August, Las Vegas, Nevada*, 2024.

[25] K. Koliogeorgi, G. Anagnostopoulos, G. Zampino, M. Sanchis, **R. Vinuesa** and S. Xydis. Auto-tuning multi-GPU high-fidelity numerical simulations for urban air mobility. *Proc. 27th Design, Automation and Test in Europe (DATE24) Conference, Valencia, Spain, March 25–27*, 2024.

[26] L. Guastoni, J. Rabault, H. Azizpour and **R. Vinuesa**. Drag-reduction strategies in wall-bounded turbulent flows using deep reinforcement learning. *Proc. 14th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM14), Barcelona, Spain, September 6–8*, 2023.

[27] P. Suárez, F. Alcántara-Ávila, A. Miró, J. Rabault, B. Font, O. Lehmkuhl and **R. Vinuesa**. Active flow control of three-dimensional cylinders through deep reinforcement learning. *Proc. 14th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM14), Barcelona, Spain, September 6–8*, 2023.

[28] A. Cremades, S. Hoyas, P. Quintero, M. Lellep, M. Linkmann and **R. Vinuesa**. Deep-learning-based explanations in wall-bounded turbulence. *Proc. 14th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM14), Barcelona, Spain, September 6–8*, 2023.

[29] L. Guastoni, J. Rabault, P. Schlatter, **R. Vinuesa** and H. Azizpour. Discovering drag reduction strategies in wall-bounded turbulent flows using deep reinforcement learning. *Proc. 11th International Conference on Learning Representations (ICLR 2023), Workshop on Physics for Machine Learning, Kigali, Rwanda, May 1–5*, 2023.

[30] S. Toosi, A. Peplinski, P. Schlatter and **R. Vinuesa**. The effect of wing-tip vortices on the flow around a NACA0012 wing. *Direct and Large-Eddy Simulation (DLES13)*, Udine (Italy), 26–28, 2022.

[31] H. Eivazi, S. Le Clainche, S. Hoyas and **R. Vinuesa**. Non-linear orthogonal modal decompositions in turbulent flows via autoencoders. *Proc. 12th International Symposium on Turbulence and Shear Flow Phenomena (TSFP12), Osaka, Japan, July 19–22*, 2022.

[32] L. Guastoni, A. G. Balasubramanian, A. Güemes, A. Ianiro, S. Discetti, P. Schlatter, H. Azizpour and **R. Vinuesa**. Non-intrusive sensing in a turbulent boundary layers via deep fully-convolutional neural networks. *Proc. 12th International Symposium on Turbulence and Shear Flow Phenomena (TSFP12), Osaka, Japan, July 19–22*, 2022.

[33] M. Atzori, A. Stroh, D. Gatti, K. Fukagata, **R. Vinuesa** and P. Schlatter. A new point of view on skin-friction contributions in adverse-pressure-gradient turbulent boundary layers. *Proc. 12th International Symposium on Turbulence and Shear Flow Phenomena (TSFP12), Osaka, Japan, July 19–22*, 2022.

[34] D. Xavier, S. Rezaeiravesh, **R. Vinuesa** and P. Schlatter. Automatic estimation of initial transient in a turbulent flow time series. *Proc. 8th European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS), Oslo, Norway, June 5–9*, 2022.

[35] A. Sánchez-Roncero, O. Garibo-I-Orts, J. A. Conejero, H. Eivazi, E. Rosenberg, F. Fuso-Nerini, J. García-Martínez, S. Hoyas and **R. Vinuesa**. ASDG — An AI-based framework for automatic classification of impact on the SDGs. *Proc. Conference on Digital Governance for Social, Economic, and Environmental Prosperity (ICEGOV), Guimaraes, Portugal, 4–7 October*, 2022.

[36] A. Honoré, H. Siren, **R. Vinuesa**, S. Chatterjee and E. Herlenius. LSTM-based recurrent neural network for neonatal sepsis detection in preterm infants. *Proc. IEEE Signal Processing in Medicine and Biology (SPMB) Symposium, Philadelphia, USA*, 2022.

[37] J. D. Patón-Romero, **R. Vinuesa**, L. Jaccheri and M. T. Baldasarre. Artificial intelligence and gender equality: a systematic study. *Proc. 15th International Conference on ICT, Society and Human Beings 2022 (ICT 2022), Lisbon, Portugal, July 19–21*, 2022.

[38] H. Eivazi, M. Tahani, P. Schlatter and **R. Vinuesa**. Physics-informed neural networks for solving Reynolds-averaged Navier–Stokes equations. *Proc. 13th ERCOFTAC Symp.*

on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17, 2021.

[39] A. G. Balasubramanian, L. Guastoni, A. Güemes, A. Ianiro, S. Discetti, P. Schlatter, H. Azizpour and **R. Vinuesa**. Predicting the near-wall region of turbulence through convolutional neural networks. *Proc. 13th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17*, 2021.

[40] A. Andreolli, D. Gatti, **R. Vinuesa**, R. Örlü and P. Schlatter. Effects of sweeps and ejections on amplitude modulation in a turbulent channel flow. *Proc. 13th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17*, 2021.

[41] F. Mallor, Á. Tanarro, N. Offermans, A. Peplinski, **R. Vinuesa** and P. Schlatter. Towards adaptive simulations of turbulent wings at high Reynolds numbers. *Proc. 13th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17*, 2021.

[42] G. Fahland, A. Stroh, D. Gatti, M. Atzori, **R. Vinuesa**, P. Schlatter and B. Frohnapfel. Energy budgets and performance development of turbulent boundary layer control on airfoils. *Proc. 13th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17*, 2021.

[43] N. Tabatabaei, G. Fahland, A. Stroh, D. Gatti, B. Frohnapfel, M. Atzori, **R. Vinuesa** and P. Schlatter. Tripping and laminar-turbulent transition: implementation in RANS-EVM. *Proc. 13th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM13), Rhodes, Greece, September 15–17*, 2021.

[44] L. Guastoni, M. P. Encinar, P. Schlatter, H. Azizpour and **R. Vinuesa**. Prediction of wall-bounded turbulence from wall quantities using convolutional neural networks. *J. Phys.: Conf. Ser.*, **1522**, 012022, 2020.

[45] M. Atzori, **R. Vinuesa**, A. Lozano-Durán and P. Schlatter. Coherent structures in turbulent boundary layers over an airfoil. *J. Phys.: Conf. Ser.*, **1522**, 012020, 2020.

[46] C. Amor C., J. M. Pérez, P. Schlatter, **R. Vinuesa** and S. Le Clainche. Soft computing techniques to analyze the turbulent wake of a wall-mounted square cylinder. *Advances in Intelligent Systems and Computing, Springer*, **950**, 2020.

[47] A. Friederici, W. Köpp, M. Atzori, **R. Vinuesa**, P. Schlatter and T. Weinkauf. Distributed percolation analysis for turbulent flows.[4] *In: IEEE 9th Symposium on Large Data Analysis and Visualization (LDAV), Vancouver, Canada, October 21*, 2019.

[48] W. Köpp, A. Friederici, M. Atzori, **R. Vinuesa**, P. Schlatter and T. Weinkauf. Notes on percolation analysis of sampled scalar fields. *In: Topological Methods in Data Analysis and Visualization V. Hotz I., Bin Masood T., Sadlo F., Tierny J. (eds). Springer, Cham*, 39–54. 2021.

[49] A. Tanarro, **R. Vinuesa** and P. Schlatter. Power-spectral density in turbulent boundary layers on wings. *Direct and Large-Eddy Simulation (DLES12)*, Madrid (Spain), June 5–7, 2019.

[50] M. Atzori, **R. Vinuesa**, D. Gatti, A. Stroh, B. Frohnapfel and P. Schlatter. Effects of different friction control techniques on turbulence developing around wings. *Direct and Large-Eddy Simulation (DLES12)*, Madrid (Spain), June 5–7, 2019.

[51] L. Guastoni, P. A. Srinivasan, H. Azizpour, P. Schlatter and **R. Vinuesa**. On the use of recurrent neural networks for predictions of turbulent flows. *Proc. Intern. Symp. on*

[4]This article was awarded a Best Paper Honorable Mention at the 9th IEEE Symposium LDAV 2019.

Turbulence & Shear Flow Phenomena (TSFP-11), Southampton, UK, July 30 - August 2, 2019.

[52] A. Tanarro, F. Mallor, N. Offermans, A. Peplinski, **R. Vinuesa** and P. Schlatter. Using adaptive mesh refinement to simulate turbulent wings at high Reynolds numbers. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-11), Southampton, UK, July 30 - August 2*, 2019.

[53] M. Atzori, **R. Vinuesa**, A. Lozano-Durán and P. Schlatter. Contribution of Reynolds-stress structures to the secondary flow in turbulent duct. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-11), Southampton, UK, July 30 - August 2*, 2019.

[54] L. I. Abreu, A. V. G. Cavalieri, P. Schlatter, **R. Vinuesa** and D. S. Henningson. Reduced-order models to analyse coherent structures in turbulent pipe flow. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-11), Southampton, UK, July 30 - August 2*, 2019.

[55] C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro, P. Schlatter and R. Örlü. Large-scale energy in turbulent boundary layers: Reynolds-number and pressure-gradient effects. *Progress in Turbulence VIII, iTi 2018, Springer Proceedings in Physics, Springer, Cham*, **226**. 2019.

[56] **R. Vinuesa**, P. S. Negi, M. Atzori, A. Hanifi, D. S. Henningson and P. Schlatter. Reynolds-number effects in turbulent boundary layers around wing sections. *Proc. 12th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM12), Montpellier, France, September 26–28*, 2018.

[57] M. Atzori, **R. Vinuesa**, A. Stroh, B. Frohnapfel and P. Schlatter. Assessment of skin-friction-reduction techniques on a turbulent wing section. *Proc. 12th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM12), Montpellier, France, September 26–28*, 2018.

[58] A. Tanarro, **R. Vinuesa** and P. Schlatter. History effects for cambered and symmetric wing profiles. *Proc. 12th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM12), Montpellier, France, September 26–28*, 2018.

[59] E. Dogan, R. Örlü, D. Gatti, **R. Vinuesa** and P. Schlatter. Revisiting the amplitude modulation in wall-bounded turbulence: towards a robust definition. *Proc. 12th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM12), Montpellier, France, September 26–28*, 2018.

[60] R. Örlü, C. Sanmiguel Vila, **R. Vinuesa**, A. Ianiro, S. Discetti and P. Schlatter. Scaling of adverse-pressure-gradient turbulent boundary layers. *Proc. 5th International Conference on Experimental Fluid Mechanics ICEFM, Munich, Germany, July 2–4*, 2018.

[61] M. Atzori, **R. Vinuesa**, A. Lozano-Durán and P. Schlatter. Characterization of turbulent coherent structures in square duct flow. *J. Phys.: Conf. Ser.*, **1001**, 012008, 2018.

[62] C. Chin, **R. Vinuesa**, R. Örlü, J. I. Cardesa, A. Noorani, P. Schlatter and M. S. Chong. Flow topology of rare back flow events and critical points in turbulent channels and toroidal pipes. *J. Phys.: Conf. Ser.*, **1001**, 012002, 2018.

[63] C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro, P. Schlatter and R. Örlü. Large-scale energy in turbulent boundary layers: Reynolds-number and pressure-gradient effects. *Progress in Turbulence VII, iTi 2016, Springer Proceedings in Physics, Springer, Cham*, **196**. 2017.

[64] **R. Vinuesa**, A. Bobke, R. Örlü and P. Schlatter. Scaling of adverse-pressure-gradient turbulent boundary layers in near-equilibrium conditions. *Progress in Turbulence VII, iTi 2016, Springer Proceedings in Physics, Springer, Cham*, **196**. 2017.

[65] **R. Vinuesa**, P. Negi, A. Hanifi, D. S. Henningson and P. Schlatter. High-fidelity simulations of the flow around wings at high Reynolds numbers. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-10)*, Chicago, USA, July 6-9, 2017.

[66] R. Örlü, **R. Vinuesa**, C. Sanmiguel Vila, A. Bobke, S. Discetti, A. Ianiro and P. Schlatter. Towards canonical adverse-pressure-gradient turbulent boundary layers — Experiments and simulations. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-10)*, Chicago, USA, July 6-9, 2017.

[67] P. Negi, **R. Vinuesa**, P. Schlatter, A. Hanifi and D. S. Henningson. Unsteady aerodynamic effects in pitching airfoils studied through large-eddy simulation. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-10)*, Chicago, USA, July 6-9, 2017.

[68] A. Vidal, **R. Vinuesa**, P. Schlatter and H. M. Nagib. Impact of corner geometry on the secondary flow in turbulent ducts. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-10)*, Chicago, USA, July 6-9, 2017.

[69] E. Otero, O. Marin, **R. Vinuesa**, P. Schlatter and A. Siegel. The effect of lossy data compression on computational fluid dynamics applications: resilience and data postprocessing. *Direct and Large-Eddy Simulation (DLES11)*, Pisa (Italy), May 29-31, 2017.

[70] V. Ryzhenkov, V. Ivashchenko, **R. Vinuesa** and R. Mullyadzhanov. Spectral-element simulations of variable-density turbulent flow in a plane channel. *EPJ Web of Conf.*, **159**, 00041, 2017.

[71] **R. Vinuesa**, S. M. Hosseini, A. Hanifi, D. S. Henningson and P. Schlatter. Assessment of turbulent boundary layers on a NACA4412 wing section at moderate *Re*. *Proc. 11th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM11)*, Palermo (Italy), September 21-23, 2016.

[72] P. Schlatter, **R. Vinuesa**, A. Bobke and R. Örlü. History effects and near-equilibrium in turbulent boundary layers with pressure gradient. *Proc. 11th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM11)*, Palermo (Italy), September 21-23, 2016.

[73] R. Örlü, C. Sanmiguel Vila, **R. Vinuesa**, S. Discetti, A. Ianiro and P. Schlatter. Tripping effects in low-Reynolds number turbulent boundary layers. *Proc. 11th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM11)*, Palermo (Italy), September 21-23, 2016.

[74] S. Straub, **R. Vinuesa**, P. Schlatter, B. Frohnapfel and D. Gati. Turbulent duct flow controlled with spanwise wall oscillations. *Proc. 11th ERCOFTAC Symp. on Engineering Turbulence Modelling and Measurements (ETMM11)*, Palermo (Italy), September 21-23, 2016.

[75] **R. Vinuesa**, R. Örlü and P. Schlatter. On determining characteristic length scales in pressure gradient turbulent boundary layers. *J. Phys.: Conf. Ser.*, **708**, 012014, 2016.

[76] A. Bobke, **R. Vinuesa**, R. Örlü and P. Schlatter. Large-eddy simulations of adverse pressure gradient turbulent boundary layers. *J. Phys.: Conf. Ser.*, **708**, 012012, 2016.

[77] **R. Vinuesa**, P. Schlatter and D. S. Henningson. Characterization of the massively separated wake behind a square cylinder by means of direct numerical simulation. *In: Segalini A. (eds) Proceedings of the 5th International Conference on Jets, Wakes and Separated Flows (ICJWSF2015)*, Springer Proceedings in Physics, vol. 185. Springer, Cham, 2016.

[78] **R. Vinuesa**, P. Schlatter and H. M. Nagib. Flow features in three-dimensional turbulent duct flows with different aspect ratios. *In: Peinke J., Kampers G., Oberlack M.,*

Wacławczyk M., Talamelli A. (eds) Progress in Turbulence VI, Springer Proceedings in Physics, vol. 165. Springer, Cham. 2016.

[79] V. Ryzhenkov, V. Ivashchenko, **R. Vinuesa** and R. Mullyadzhanov. Simulation of heat and mass transfer in turbulent channel flow using the spectral-element method: effect of spatial resolution. *J. Phys.: Conf. Ser.*, **754**, 062009, 2016.

[80] **R. Vinuesa**, S. M. Hosseini, A. Hanifi, D. S. Henningson and P. Schlatter. Direct numerical simulation of the flow around a wing section using high-order parallel spectral methods. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-9)*, Melbourne, Australia, June 30-July 3, 2015.

[81] **R. Vinuesa**, P. Schlatter and H. M. Nagib. Characterization of secondary flows in turbulent rectangular ducts with varying aspect ratio. *Proc. Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-9)*, Melbourne, Australia, June 30-July 3, 2015.

[82] S. M. Hosseini, **R. Vinuesa**, P. Schlatter, A. Hanifi and D. S. Henningson. Direct numerical simulation of the flow around a wing section at a moderate Reynolds number. *Proc. 23rd Annual Conference of the CFD Society of Canada*, Waterloo, Canada, June 7-10, 2015.

[83] **R. Vinuesa**, E. Bartrons, D. Chiu, J.-D. Rüedi, P. Schlatter, A. Obabko and H. M. Nagib. On minimum aspect ratio for experimental duct-flow facilities. *Progress in Wall Turbulence 2: Understanding and Modelling*, Lille, France, June 18-20, 2014. 201–211. 2015.

[84] H. Cachafeiro, L. F. de Arévalo, **R. Vinuesa**, R. López-Vizcaíno and M. Luna. Analysis of vacuum evolution inside Solar Receiver Tubes. *Energy Procedia, International Conference on Concentrating Solar Power and Chemical Energy Systems, SolarPACES*, Beijing, China, September 16-19, 2014. **69**, 289–298, 2015.

[85] H. Cachafeiro, L. F. de Arévalo, **R. Vinuesa**, J. Goikoetxea and J. Barriga. Impact of solar selective coating ageing on energy cost. *Energy Procedia, International Conference on Concentrating Solar Power and Chemical Energy Systems, SolarPACES*, Beijing, China, September 16-19, 2014. **69**, 299–309, 2015.

[86] **R. Vinuesa**, A. Noorani, A. Lozano-Durán, G. K. El Khoury, P. Schlatter, P. F. Fischer and H. M. Nagib. Direct numerical simulations of variable aspect-ratio turbulent duct flows at low to moderate Reynolds numbers. *Intern. Symp. on Turbulence & Shear Flow Phenomena (TSFP-8)*, Poitiers, France, August 28-30, 2013.

[87] **R. Vinuesa**, P. H. Rozier, R. D. Duncan and H. M. Nagib. Renaissance in turbulent boundary layers, and impact in modeling wall-bounded turbulence. *41st AIAA Fluid Dynamics Conference and Exhibit*, Honolulu, Hawaii, June 27-30, 2011.

3. Monographs

[1] **R. Vinuesa**. *Synergetic computational and experimental studies of wall-bounded turbulent flows and their two-dimensionality.* PhD Thesis, Illinois Institute of Technology, Chicago, USA. ISBN: 9781303522079 (397 pages). 2014. Available online from: `https://pqdtopen.proquest.com/doc/1459751458.html?FMT=ABS`.

[2] **R. Vinuesa**. *Computations of turbulent boundary layers subjected to various localized pressure gradients.* MS Thesis, Illinois Institute of Technology, Chicago, USA. Thesis code: ST3g742 (244 pages). 2009. Available in Galvin Library: `https://vufind.carli.illinois.edu/vf-iit/Record/iit_779996`.

5. Books and book chapters

[1] A. Honoré, H. Siren, **R. Vinuesa**, S. Chatterjee and E. Herlenius. Deep recurrent architectures for neonatal sepsis detection from vital signs data. *Machine Learning Applications in Medicine and Biology* . A. Ahmed, J. Picone (editors). Springer Nature, 2024.

[2] G. Lindberg, I. Carrero, F. Mallor, J. Estévez, M. Battaglini and **R. Vinuesa**. Autonomous driving: present and emerging trends of technology, ethics, and law. *Handbook on Artificial Intelligence and Transport.* Hussein Dia (editor). Edward Elgar Publishing, 2023.

[3] B. Sirmacek, S. Gupta, F. Mallor, H. Azizpour, Y. Ban, H. Eivazi, H. Fang, F. Golzar, I. Leite, G. I. Melsion, K. Smith, F. Fuso Nerini, and **R. Vinuesa**. The potential of artificial intelligence for achieving healthy and sustainable societies. *The ethics of artificial intelligence for the sustainable development goals.* F. Mazzi and L. Floridi (editors). Springer Nature, 2023.

[4] P. Torres, B. Sirmacek, S. Hoyas and **R. Vinuesa**. AI, Climate change and urban pollution. *Artificial Intelligence in Medicine.* N. Lidströmer and H. Ashrafian (editors). Springer Nature, 2021.

[5] **R. Vinuesa** and R. Örlü. Measurement of wall-shear stress. *Experimental Aerodynamics.* S. Discetti and A. Ianiro (editors). CRC Press Taylor & Francis Group, Boca Raton, FL, 2017.

[6] R. Örlü and **R. Vinuesa**. Thermal anemometry. *Experimental Aerodynamics.* S. Discetti and A. Ianiro (editors). CRC Press Taylor & Francis Group, Boca Raton, FL, 2017.

6. Patents and inventions

[1] R. Navarro and **R. Vinuesa**. Utility Model: Device to deliver a filtered air flow. *Spanish Official Bulletin of Industrial Property.* Patent number: ES1259855U, *TRITA-SCI-RAP 2021:002*, 2021.

7. Technical reports

[1] A. Wickberg, E. Kaklopoulou, E. Ljungberg, E. Johnson, J. Ivarsson, P. Sanches, **R. Vinuesa**, S. Höhler, T. Almeida and V. Dignum. AI, Sustainability and Agenda 2030. *WASP-HS Report.* 2023.

[2] O. Gaffney, J. Falk, A. Vaden-Youmans, **R. Vinuesa**, F. Larosa and A. Ghosh. AI for clean energy: accelerating project pipeline development globally. *Exponential Roadmap Initiative.* White Paper, 2023.

[3] W. Naudé and **R. Vinuesa**. Data, global development and COVID-19: lessons and consequences. *United Nations University, UNU-WIDER.* Working Paper 2020/109, 2020.

[4] S. Rezaeiravesh, **R. Vinuesa** and P. Schlatter. A statistics toolbox for turbulent pipe flow in Nek5000. *Technical Report.* TRITA-SCI-RAP 2019:008, 2019.

[5] **R. Vinuesa**, A. Peplinski, M. Atzori, L. Fick, O. Marin, E. Merzari, P. S. Negi, A. Tanarro and P. Schlatter. Turbulence statistics in a spectral-element code: A toolbox for high-fidelity simulations. *Technical Report.* TRITA-SCI-RAP 2018:010, 2018.